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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

VILAKAZI, SIZO BINDA

ART UNIT

PAPER NUMBER

3747

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/649,793	Applicant(s) COLE ET AL.	
	Examiner SIZO B. VILAKAZI	Art Unit 3747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 68-100 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 68-100 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 68-70, 78 and 82 are rejected under 35 U.S.C. 102(b) as being anticipated by Burson (US Patent 3,821,570).

3. In re Claim 68, Burson discloses an engine generator, for an engine comprising a flywheel (Item 18) configured as a mass of rotatable magnets (Item 22) and adjacent ferromagnetic material (Item 20 and Column 2, Lines 19-24) configured to form a continuous ferromagnetic ring and sized to carry magnetic alternator flux, and mount the magnets to provide magnetic flux distribution and to constitute a unitary flywheel-alternator assembly for alternator power generation (Column 2, Lines 49-56).

4. In re Claim 69, Burson discloses a generator wherein an inner portion of the flywheel is made from lightweight material and constitutes the only structural member connecting the rotatable magnets and associated ferromagnetic material with a crankshaft of the engine.

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5. In re Claim 70, Burson discloses a generator wherein the unitary flywheel-alternator assembly is the sole component driven by the engine.
6. In re Claim 78, Burson discloses a generator wherein the engine is an internal combustion engine.
7. In re Claim 82, Burson discloses a generator wherein the alternator is a permanent magnet alternator.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 68-91, 99 and 100 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scofield (US Patent 1,924, 462) in view of Burson (US Patent 3,821,570).
10. Scofield discloses, as in claims 68 and 99, a generator for an engine comprising a flywheel (11) configured so that a mass of rotatable magnets (21) constitute a unitary flywheel-alternator assembly for alternator power generation, wherein an inner portion of the of the flywheel of the assembly constitutes the only structural member connecting the rotatable magnets with an engine crankshaft, said inner portion also functioning as a

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cooling fan or blower to create air flow rate and air pressure rise sized to force cooling air over selected engine areas.

11. Scofield does not disclose an adjacent ferromagnetic material sized to carry magnetic alternator flux.

12. However Burson discloses an engine generator, for an engine comprising a flywheel (Item 18) configured as a mass of rotatable magnets (Item 22) and adjacent ferromagnetic material (Item 20), sized to carry magnetic alternator flux, and mount the magnets to provide magnetic flux distribution and to constitute a unitary flywheel-alternator assembly for alternator power generation.

13. Therefore it would have been obvious to modify the generator disclosed by Scofield with the adjacent ferromagnetic material disclosed by Burson in order to prevent/reduce leakage flux of the main magnets.

14. Regarding claim 69, Scofield/ Burson disclose a generator wherein an inner portion of the flywheel is made from a lightweight material and constitutes the only structural member connecting the rotatable magnets and associated ferromagnetic material with a crankshaft of the engine.

15. Regarding claim 70, Scofield/Burson disclose a generator wherein the unitary flywheel-alternator fan assembly is the sole component driven by the engine.

16. Claim 71-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scofield/Burson.

17. Scofield/Burson disclose the claimed invention except for the choice of materials. It would have been obvious to one having ordinary skill in the art at the time the

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invention was made to use the claimed materials , since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

18. Regarding claim 77, Scofield discloses a generator wherein said inner portion also functions as a cooling fan or blower to create the necessary air flow rate and air pressure rise necessary to force cooling air over selected areas of the engine, the selected engine areas comprising at least one of an oil reservoir, electronics, cylinder head (4), and engine block. (See Figures 1-6)

19. Regarding claim 78, Scofield/Burson disclose a generator wherein the engine is an internal combustion engine.

20. Regarding claim 79, Scofield discloses a generator wherein the cooling fan is selected from the group consisting of a centrifugal fan, an axial fan and a mixed flow fan.

21. Regarding claim 80, Scofield discloses a generator wherein an engine cowling (42) is provided to function as at least two of a fan shroud, a fan scroll, a distributor to cool the engine and the alternator, an electronic cold plate and one or more coolant ducts. (See lines 21-24, column 3)

22. Regarding claim 81, Scofield discloses a generator wherein the distributor function of the engine cowling separates air flow to cool at least two of an engine head, cylinder wall of the engine, electrical components, and an oil sump.

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23. Regarding claim 82, Scofield/Burson disclose a generator wherein the alternator is a permanent magnet alternator.

24. Regarding claim 83, Scofield discloses a generator wherein means is provided for converting alternating current produced by the alternator into direct current. (See lines 7-9, column 1)

25. Regarding claim 84, Scofield/Burson disclose a generator wherein the alternator is a radial gap alternator.

26. Regarding claims 85 and 86, Scofield discloses a generator wherein the converting means comprises full wave rectifiers (46).

27. Regarding claim 87, Scofield/Burson disclose a generator wherein the alternator is configured to produce three- phase power in parallel circuits.

28. Regarding claim 88, Scofield discloses a generator wherein an engine cowling (42) is provided to function as at least two of a fan shroud, a fan scroll, a distributor to cool the engine and the alternator, an electronic cold plate and one or more coolant ducts. (See lines 21-24, column 3)

29. Regarding claim 89, Scofield/Burson disclose a generator wherein the converting means is arranged at the engine cowling.

30. Regarding claim 90, Scofield discloses a generator wherein a backpack mounting is provided for the engine and alternator.

31. Regarding claims 91 and 100, Scofield/Burson do not explicitly disclose a generator wherein the engine and alternator are configured to produce a power output of up to about 5 or 15 kw, however it would have been obvious to one having ordinary

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skill in the art at the time the invention was made to do so, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

32. Claims 92-98 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scofield and Burson as applied to Claims 68 and 99 and further in view of Yamada et al (US PG Pub 2004/0021320 A1)

33. In re Claim 92 Scofield/Burson disclose the claimed invention except for the engine cowling which functions as a fan shroud.

34. However, Yamada et al. disclose an engine cowling provided to function as at least two of a fan shroud, a fan scroll, a distributor to cool the engine and alternator, an electronic cold plate and one or more coolant ducts (Paragraphs [0048] and [0057])

35. Therefore it would have been obvious to modify the generator disclosed by Scofield/Burson with the cowling disclosed by Yamada et al. in order to more efficiently cool the engine.

36. In re Claim 93, Yamada et al. disclose a generator wherein the distributor function of the engine cowling separates air flow to cool at least two of an engine head, cylinder wall of the engine, oil sump and electronics.

37. In re Claim 94, Yamada et al. disclose a generator wherein a fan shroud for the cooling fan is operatively associated with the engine cooling to force air through the engine cowling.

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38. In re Claim 95, Scofield discloses a generator wherein the cooling fan provides a mechanical link between the rotational magnets and a mounting portion of the flywheel.

39. In re Claim 96, Scofield/Burson disclose a generator wherein a lightweight alloy in the cooling fan constitutes the mechanical link and ferromagnetic material of the alternator's rotor provides the inertia component.

40. In re Claim 97, Scofield/Burson disclose a generator wherein the alternator rotor, inertial material and fan or blower constitute a multi-piece construction of lightweight material, ferromagnetic material, and magnets.

41. In re Claim 98, Scofield discloses a generator wherein the lightweight alloy is one of magnesium or an aluminum alloy.

Response to Arguments

42. Applicant's arguments with respect to claims 68-100 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SIZO B. VILAKAZI whose telephone number is (571)270-3926. The examiner can normally be reached on M-F: 10:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen K. Cronin can be reached on (571) 272-4536. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SIZO B VILAKAZI/
Examiner, Art Unit 3747

/Stephen K. Cronin/
Supervisory Patent Examiner, Art Unit 3747